

Small Business Innovation Research

Arc-Second Stability of Graphite Fiber Reinforced Composite Optical Bench Via Passive Thermal Management

Composite Optics, Inc.
San Diego, CA



INNOVATION

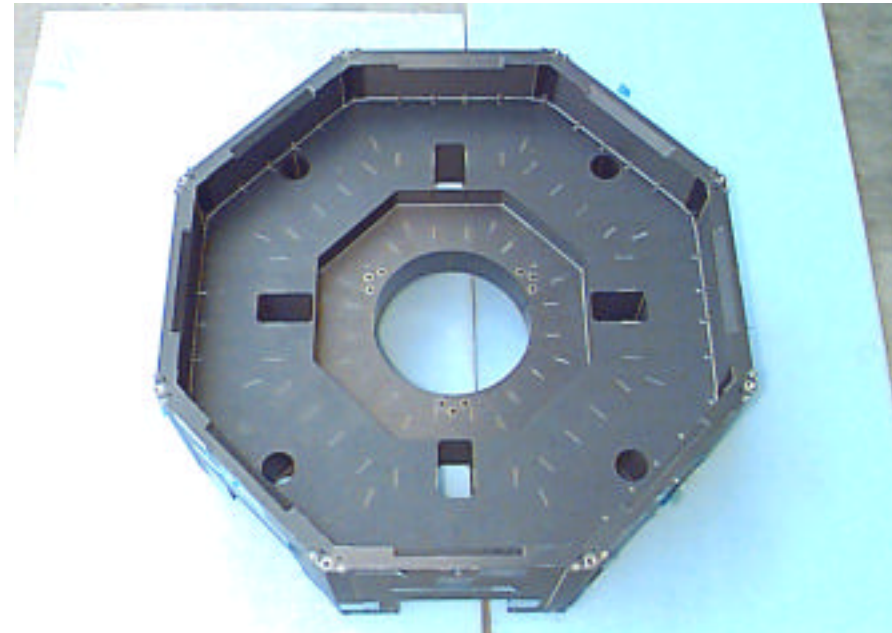
Developed a composite optical bench and radiator panel hardware that is lightweight, features high stiffness, near-zero coefficient of thermal expansion, integral passive thermal control; and is stable to less than one arc-second of distortion between any of the attached components.

ACCOMPLISHMENTS

- ◆ Developed, designed, fabricated, and tested an all composite lightweight optical bench that will support the Multi-Beam Laser Altimeter (MBLA) Instrument of the Vegetation Canopy Lidar (VCL) Mission.
- ◆ Delivered flight qualified optical bench to NASA one month ahead of schedule.
- ◆ Developed, designed, and fabricated an all composite lightweight radiator panel that meets the thermal requirements established by NASA.
- ◆ Delivered composite radiator panel to NASA for thermal testing and evaluation of various panel/laser integration approaches.

COMMERCIALIZATION

- ◆ Several companies, including Lockheed Martin, TRW, and Eastman Kodak have expressed interest in this technology .



***Vegetation Canopy Lidar
Optical Bench Assembly***

GOVERNMENT SCIENCE/APPLICATIONS

- ◆ Has military and scientific applications for both aircraft and space-based instruments.
- ◆ Possible applications for the lightweight mirror optical structures technology on the Next Generation Space Telescope, Far Infrared and Submillimeter Program, and the Space Interferometry Mission programs.

Points of Contact:

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Goddard Space Flight Center

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